B5

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/756,946	01/09/2001	Leon Bruckman	6727/01145	6186

7590 07/29/2004

DARBY & DARBY P.C.
805 Third Avenue
New York, NY 10022

EXAMINER	
KADING, JOSHUA A	

ART UNIT	PAPER NUMBER
2661	3

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/756,946	Applicant(s) BRUCKMAN, LEON	
	Examiner Joshua Kading	Art Unit 2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,13-25,27 and 28* is/are rejected.

7)☒ Claim(s) *12 and 26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 1 and 15 are objected to because of the following informalities:

Claim 1, line 11; and claim 15, line 12 state "in process". It is believed applicant means for this to be "in progress". Therefore, it is recommended that "in process" be changed to --in progress--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-8, 10, 11, 13-17, 19-22, 24, 25, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drake, Jr. et al. (U.S. Patent 5,461,611) in view of Chikenji et al. (U.S. Patent 6,639,893 B1).

Regarding claim 1, Drake discloses "in a communication network that includes a plurality of nodes interconnected by links, a method for routing a data flow, comprising:

receiving a request to allocate one or more resources in the network (col. 10, lines 43-46) so as to carry the data flow between first and second ones of the nodes (figure 1 shows a plurality of nodes 10, 29, and 20 in a network) over one of a plurality

of paths therebetween, each such path comprising a respective sequence of the links (figure 1 shows several paths to and from the nodes each containing links);

determining, for the links comprised by each of the paths, respective levels of use of the requested resources due to communications in pro[g]ess over the network (col. 11, lines 13-17 where the known bandwidth represents the communications in progress and the bandwidth subtracted from that represents the requested resources)..."

However, Drake lacks what Chikenji discloses, "selecting which of the paths is to carry the data flow responsive to the determined levels of use of the requested resources on the links comprised in each of the paths (col. 11, lines 35-63 (emphasis on lines 58-63) where the "path selection means", when taken in the context of a switch (node) on the transmission line, uses "the smallest weight" to select the path, i.e. the path selection means chooses the path based on the largest amount of free bandwidth)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the selecting of paths with the rest of the method for the purpose of distributing data communications as evenly as possible across paths (Chikenji, col. 11, lines 58-63 where it is implied that by selecting a path with the smallest capacity used, other, more utilized paths, will not be overused). The motivation for evenly distributing data over the given paths is so that the system does not have some paths over burdened while others are underutilized.

Regarding claim 15, Drake discloses "a communication network, comprising:

a plurality of nodes (figure 1, elements 10, 29, and 20 all act as nodes);

a plurality of links, interconnecting the nodes to provide communications therebetween (figure 1, where there are links drawn between the nodes); and

a dispatcher, coupled to receive a request to allocate one or more resources in the network (col. 10, lines 43-46 where the allocator 26 is located in the dispatcher) so as to carry the data flow between first and second ones of the nodes over one of a plurality of paths therebetween, each such path comprising a respective sequence of the links (figure 1 shows the nodes and links as previously described), and adapted to determine, for the links comprised in each of the paths, respective levels of use of the requested resources due to communications in pro[g]ess over the network (col. 11, lines 13-17 where the known bandwidth represents the communications in progress and the bandwidth subtracted from that represents the requested resources)..."

However, Drake lacks what Chikenji discloses "...to select which of the paths is to carry the data flow responsive to the determined levels of use of the requested resources on the links comprised in each of the paths (col. 11, lines 35-63 (emphasis on lines 58-63) where the "path selection means", when taken in the context of a switch (node) on the transmission line, uses "the smallest weight" to select the path, i.e. the path selection means chooses the path based on the largest amount of free bandwidth)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the selecting of paths with the rest of the network for the purpose of

distributing data communications as evenly as possible across paths (Chikenji, col. 11, lines 58-63 where it is implied that by selecting a path with the smallest capacity used, other, more utilized paths, will not be overused). The motivation for evenly distributing data over the given paths is so that the system does not have some paths over burdened while others are underutilized.

Regarding claims 2 and 16, Drake and Chikenji disclose the method of claim 1 and the network of claim 15. However, Drake explicitly lacks what Chikenji further discloses, "the network comprises an Internet Protocol (IP) network (col. 26, lines 27-29)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the IP network with the method of claim 1 and the network of claim 15 for the same reasons and motivation as in claims 1 and 15.

Regarding claims 3 and 17, Drake and Chikenji disclose the method of claim 1 and the network of claim 15. However, Drake lacks what Chikenji further discloses, "the nodes are interconnected in a ring, and wherein the plurality of paths comprises a first path traversing the ring in one direction and a second path traversing the ring in the opposite direction (figure 13, Ring Network C shows two dotted paths that flow in opposite directions), and wherein selecting which of the paths is to carry the data flow comprises selecting the first or the second path (figure 13 in combination with col. 11, lines 35-64 where are only the two paths to select from in figure 13 and thus the path selection means must choose between these two)." It would have been obvious to one

with ordinary skill in the art at the time of invention to include the first and second paths with the method of claim 1 and the network of claim 15 for the same reasons and motivation as in claims 1 and 15.

Regarding claims 5 and 19, Drake and Chikenji disclose the method of claim 1 and the network of claim 15. However, Chikenjji lacks what Drake further discloses, "the one or more resources comprise a link bandwidth (col. 11, lines 13-17 whereby calculating a bandwidth by subtracting the requested or allocated bandwidth from the remaining bandwidth says that the link must have its own finite bandwidth)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the link bandwidth with the method of claim 1 and the network of claim 15 for the same reasons and motivation as in claims 1 and 15.

Regarding claims 6 and 20, Drake and Chikenji disclose the method of claim 1 and the network of claim 15. However, Chikenji lacks what Drake further discloses, "the one or more resources comprise a processing power associated with each of the links (figure 1 and col. 11, lines 13-17 both suggest that each link has to have a processing power associated with it, as is known in the art all nodes (such as those in figure 1) have processors attached to them and each have a finite amount of processing power devoted to each communication link coming in and going out of the node, further to calculate the remaining bandwidth of a link, a processor must do that calculation and thus each link will have some processing power associated with it at some time)." It

would have been obvious to one with ordinary skill in the art at the time of invention to include the processing power associated with each of the links with the method of claim 1 and the network of claim 15 for the same reasons and motivation as in claims 1 and 15.

Regarding claims 7 and 21, Drake and Chikenji disclose the method of claim 1 and the network of claim 15. However, Chikenji lacks what Drake further discloses "wherein selecting which of the paths is to carry the data flow comprises comparing an amount of the one or more resources requested to a resource budget assigned to the first node, and permitting the data flow only if allocating the requested resources will not cause a total of the resources allocated to the first node to exceed the budget (col. 11, lines 4-10 where Drake is saying that since the requested QoS bandwidth requirement is within the bounds of the available bandwidth, or the resource budget, the data flow can be permitted because the requested resources will not exceed the available bandwidth)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the permitting the data flow if the requested resources were within the resource budget for the same reasons and motivation as in claims 1 and 15.

Regarding claims 8 and 22, Drake and Chikenji disclose the method of claim 7 and the network of claim 21. However, Chikenji lacks what Drake further discloses, "comparing the amount of the one or more resources comprises comparing the amount of each of the resources requested to the resource budget assigned for each of the

resources, and wherein permitting the data flow comprises permitting the flow only if all of the resources requested for at least one of the paths are within the budget (col. 11, lines 4-10 where each component of the path is compared to see if the available bandwidth will be adequate for the requested resource, if all paths are adequate the flow is permitted as seen in figure 5, elements 91, 82)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the comparing of each path component to determine if the path is within the budget with the method of claim 7 and the network of claim 21 for the same reasons and motivation as in claims 7 and 21.

Regarding claims 10 and 24, Drake and Chikenji disclose the method of claim 1 and the network of claim 15. However, Chikenji lacks what Drake further discloses, "selecting which of the paths is to carry the data comprises verifying that a sufficient amount of the requested resources is available to carry the data flow on every one of the links comprised in the selected path (col. 11, lines 4-10 where determining if the requested QoS is within the available resources is the same as verifying that a sufficient amount of resources are available to carry the data)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the verifying of the resources with the method of claim 1 and the network of claim 15 for the same reasons and motivation as in claims 1 and 15.

Regarding claims 11 and 25, Drake and Chikenji disclose the method of claim 1 and the network of claim 15. However, Drake lacks what Chikenji further discloses,

"selecting which of the paths is to carry the data flow comprises selecting the one of the paths having the lowest level of a predetermined measure of use of the requested resources (col. 11, lines 58-63 whereby selecting the smallest weight in Chikenji suggests that the lowest level of the resources in use, or the smallest weight, is used to select the path)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the lowest level of resources in use as a criterion for selection with the method of claim 1 and the network of claim 15 for the same reasons and motivation as in claim 15.

Regarding claims 13 and 27, Drake and Chikenji disclose the method of claim 1 and the network of claim 15. However, Chikenji lacks what Drake further discloses, "receiving the request comprises choosing a dispatcher within the network to manage allocation of the resources, wherein the dispatcher receives and processes the request (figure 1, node 20 acts as the dispatcher to allocate the resources of the network)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the dispatcher with the method of claim 1 and the network of claim 15 for the same reasons and motivation as in claims 1 and 15.

Regarding claims 14 and 28, Drake and Chikenji disclose the method of claim 13 and the network of claim 27. However, Chikenji lacks what Drake further discloses, "choosing the dispatcher comprises choosing one of the nodes to act as the dispatcher (figure 1, node 20 again acts as the dispatcher as in claims 13 and 27)." It would have

been obvious to one with ordinary skill in the art at the time of invention to include the dispatcher as a node with the method of claim 13 and the network of claim 27 for the same reasons and motivation as in claims 13 and 27.

Claims 4 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drake, Jr. et al. and Chikenji et al. as applied to claims 3 and 17 above, and further in view of applicant's admitted prior art (AAPA).

Regarding claims 4 and 18, Drake and Chikenji disclose the method of claim 3 and the network of claim 17. However, both Drake and Chikenji lack what AAPA discloses, "conveying the data flow over an inner or outer data link ring within the network provided by a Spatial Reuse Protocol (SRP) (Specification, page 1, lines 17-page 2, lines 1-2)." It would have been obvious to one with ordinary skill in the art to convey the data using an SRP for the purpose of allowing node to use different parts of the same ring simultaneously. The motivation for this being that more than one node can use the ring at any given time, thus increasing throughput and efficiency.

Claims 9 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drake, Jr. et al. and Chikenji et al. as applied to claims 1 and 15 above, and further in view of Chin et al. (U.S. Patent 6,314,110 B1).

Regarding claims 9 and 23, Drake and Chikenji disclose the method of claim 1 and the network of claim 17. However, both Drake and Chikenji lack what Chin further discloses, "increasing an allocation to the first node of the one or more requested

resources on the selected path by a predetermined quantum (col. 11, lines 26-28)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the increasing of the resources by a predetermined quantum with the method of claim 1 and the network of claim 17 for the purpose of allowing the nodes to regulate the amount of its own traffic it transmits onto the network (Chin, col. 11, lines 12-16). The motivation for this is to allow a node to increase (or decrease) its traffic independently of other nodes, thus the changing node will only use its own processing time.

Allowable Subject Matter

Claims 12 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (703) 305-0342. The examiner can normally be reached on M-F: 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Olms can be reached on (703) 305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joshua Kading
Examiner
Art Unit 2661

July 22, 2004

KENNETH VANDERPUYE
PRIMARY EXAMINER